Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ARNAUD GOURDOL

Appeal No. 2001-2575
Application No. 09/074,545[1]

ON BRIEF

Before KRASS, FLEMING and SAADAT, Administrative Patent Judges.
SAADAT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the Examiner's final rejection of claims 1-3, 5, 6, 13-15, 17-22, 24-28, 30, 32, 33, 35-39, 47, 48, 50, 52-54, 56, 57 and 59-63. Claims 4, 7-12, 16, 23, 29, 31, 40-46, 49, 51 and 58 have been cancelled while the Examiner has objected to claims 34, 55 and 62 and has indicated their allowability if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

We reverse.

[1] Application for patent filed May 8, 1998.

BACKGROUND

Appellant's invention is directed to a method and apparatus for compressing small amounts of image data to improve the compression ratio and to reduce the effects of lost data associated with the data compression. A data compression algorithm transforms image data from RGB color space to luminance and chrominance data values, reduces the number of chrominance data values and performs a run length encoding of the reduced data.

Representative independent claim 1 is reproduced below:

1. A method for compressing image data of a graphical icon, comprising the steps of:

receiving image data of a graphical icon having a size which is less than a 256 x 256 pixel array in a first format;

transforming said image data of said graphical icon from said first format to a luminance format comprising luminance and chrominance data values;

reducing the number of chrominance data values by a factor of N:1, where N>1;

run length encoding said luminance data values and said reduced chrominance data values to generate a compressed data stream; and

storing said compressed data stream in a memory device.

The Examiner relies on the following references in rejecting the claims:

Normile et al. (Normile)	5,212,742	May. 18, 1993
Meriwether et al. (Meriwether)	5,671,435	Oct. 18, 1994
Kuroshima et al. (Kuroshima)	5,500,923	Mar. 19, 1996
Hirano et al. (Hirano)	5,553,277	Sep. 3, 1996
Pearlman et al. (Pearlman)	5,764,807	Jun. 9, 1998 (filed Sep. 14, 1995)

James, D. Murray et al. (Murray), "Encyclopedia of Graphics File Formats," second edition, O'Reilly & Associates, Inc., 1996, p. 164.

Claims 1-3, 6, 13-15, 18-22, 25, 26, 30, 33 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirano in view of Normile and Kuroshima.

Claims 5, 17 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirano, Normile and Kuroshima in view of Meriwether.

Claims 32, 36-39, 50, 52-54, 56, 57, 59-61 and 63 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirano, Normile and Kuroshima in view of Murray.

Claims 27 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirano, Normile and Kuroshima in view of Pearlman.

Claims 47 and 48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirano in view of Normile, Kuroshima, Murray and Pearlman.

We make reference to the answer (Paper No. 13, mailed May 4, 2001) for the Examiner's reasoning, and to the appeal brief (Paper No. 12, filed March 8, 2001) and the reply brief (Paper No. 14, filed July 2, 2001) for Appellant's arguments thereagainst.

OPINION

With respect to the rejection of claims 1-3, 6, 13-15, 18-22, 25, 26, 30, 33 and 35, the Examiner relies on Hirano for disclosing the claimed method and apparatus for compressing image data except for transforming the format of the image and reducing the chrominance data values (answer, pages 4 & 5). The Examiner further relies on Normile for teaching a method for transforming image data from a first format (RGB) to a luminance/chrominance format (UVY) (answer, page 5) and on Kuroshima for making images of various resolutions (answer, page 6) and reasons that the combination makes more effective utilization of an image memory (answer, page 6).

Appellant argues that there is no reason to apply the compression of video images of Normile to the search techniques

of Hirano which relates to searching for individual, still-frame images since the transformations required for compression of images would have prolonged the search process in Hirano (brief, pages 5 & 6). Additionally, Appellant asserts that Kuroshima is merely concerned with the resolution, not the size, of an image data and therefore, does not remedy the deficiency of other references related to the claimed compression of small amounts of image data (brief, page 7; reply brief, page 3).

In response to Appellant's arguments, the Examiner asserts that both Hirano and Normile are directed to the problem of data compression in order to reduce the amount of stored data and to save storage space (answer, page 13). The Examiner further argues that as Normile provides for compression of video images using "inter" and "intra" frame designations, one of ordinary skill in the art would have applied the same method of treating an intra frame in the video sequence of Normile to compress the still images of Hirano (id.).

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of presenting a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). The conclusion that the claimed subject matter is obvious must be supported by evidence, as shown

by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Furthermore, the Examiner must produce a factual basis supported by teaching in a prior art reference or shown to be common knowledge of unquestionable demonstration, consistent with the holding in Graham v. John Deere Co., 383 U.S. 1 (1966). Such evidence is required in order to establish a prima facie case. In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984); In re Cofer, 354 F.2d 664, 668, 148 USPQ 268, 271-72 (CCPA 1966).

Independent claims 1, 13 and 20 require reducing the number of chrominance data values of a small image before performing the run length encoding of the reduced data. While Hirano does disclose run length encoding of still image data (abstract), the reference offers no teaching or suggestion of transforming the image data to a luminance format including chrominance data values and reducing such values. Normile performs the compression process of video data by transforming the RGB representation of digitized images to chrominance and luminance

components (col. 3, lines 44-67). Kuroshima, on the other hand, addresses the problem of storing large amounts of image data by converting the data to a lower resolution before storage (col. 3, lines 1-6 and col. 7, lines 1-9). However, as stated by Appellant (brief, page 7), a reduction in resolution is not the same as a reduction in size or chrominance data values.

In fact, none of the references recognize the importance of compression of small amounts of image data, as recited in the claims. Therefore, contrary to the Examiner's position, transforming small image data to chrominance and luminance data values, reducing the number of chrominance data values and compression of the reduced values cannot be derived from the combination of the references.

We also disagree with the Examiner's stated reasons for combining Hirano with Normile and Kuroshima. There is no indication in Normile or Kuroshima that the compression of images using their chrominance data values or storage of a lower resolution image data, in addition to the run length encoding compression, may benefit the image search and retrieval of Hirano. Notwithstanding the Examiner's arguments that the combination is based on the selection and compression of any reduced size image (answer, page 15), we agree with Appellant

that such combination is made only in terms of combining the reduced chrominance data values and the run length encoding compression as disclosed by Appellant. Normile merely discusses compression of video images after transforming RGB representation of images to UVY chrominance and luminance components (col. 3, lines 44-67) while Kuroshima is concerned with storing compressed image data at different resolutions (col. 6, line 62 through col. 7, line 22). Thus, the only possible suggestion to combine these separate teachings must have come not from the references themselves, but from the Appellant's disclosure based on impermissible hindsight. Whereas, we are required to make the particular findings as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected and modified the prior art teachings for combination in the manner claimed. In re Kotzab, 217 F.3d 1365, 1369-70, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000).

In view of our analysis above, we find that the Examiner has failed to set forth a prima facie case of obviousness because the necessary teachings and suggestions related to the claimed step of reducing the number of chrominance data values and applying the run length encoding to the reduced values are not shown.

Accordingly, we do not sustain the 35 U.S.C. § 103 rejection of claims 1-3, 6, 13-15, 18-22, 25, 26, 30, 33 and 35.

With respect to the rejection of claims 5, 17 and 24, the Examiner further relies on Meriwether (answer, page 7) and on Murray in rejecting claims 32, 36-39, 50, 52-54, 56, 57, 59-61 and 63 (answer, page 8), in addition to the references discussed above, for teaching the details of run length encoding. With respect to claims 27, 28, 47 and 48, the Examiner additionally relies on Pearlman for teaching a computer readable medium (answer, pages 10 & 11). However, none of these references overcomes the deficiencies of the combination of the Hirano, Normile and Kuroshima discussed above as they also fail to teach the claimed reducing the number of chrominance data values and applying the run length encoding to the reduced values. Therefore, the 35 U.S.C. § 103 rejections of claims 5, 17 and 24,, 27, 28, 32, 36-39, 47, 48, 50, 52-54, 56, 57, 59-61 and 63 over the various combinations of these references cannot be sustained.

CONCLUSION

In view of the foregoing, the decision of the Examiner rejecting claims 1-3, 5, 6, 13-15, 17-22, 24-28, 30, 32, 33, 35-39, 47, 48, 50, 52-54, 56, 57 and 59-63 under 35 U.S.C. § 103 is reversed.

REVERSED

ERROL A. KRASS Administrative Patent Judge	)
MICHAEL R. FLEMING Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
MAHSHID D. SAADAT Administrative Patent Judge	)

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